# **C1**

# 

## Healthcare

www.healthcare.philips.com

## **Preliminary Site Preparation Support Document**

The equipment components shown in this drawing package are based on the current proposed equipment configuration and are subject to change if modifications are made to the configuration at the time of final equipment purchase.

		Revision History  Note for Architects and/or Contractors: If revisions are listed, these drawings must be thoroughly reviewed so that all changes can be incorporated into your project.	
Rev.	Date	Revision Descriptions.	Ву
Α	11/19/2010	Changed system to FD20 Ceiling with short arm. Removed quote and added options WITT, IVUS, ACIST table mount and UPS 150kva.	СС
В	11/16/2010	Created Preliminary Site Preparation Support Document. Removed ACIST table mount. Added ACIST Pedestal, EP Navigator, Xcelera Workstation and Multivision. Updated room layout.	СС
С	1/28/2011	Updated room layout. Added reflected ceiling and boom plans to the drawing. Added RIC-IC. Added quote 1-R5TFEL Rev. 3. Removed conduits to Stub, HCU and DS.	СС

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#### 1. Responsibility

The customer shall be solely responsible, at its expense for preparation of site, including any required structural alterations. The site preparation shall be in accordance with plans and specifications provided by Philips. Compliance with all safety electrical and building codes relevant to the equipment and its installation is the sole responsibility of customer. The customer shall advise Philips of conditions at or near the site which could adversely affect the carrying out of the installation work and shall ensure that such conditions are corrected and that the site is fully prepared and available to Philips before the installation work is due to begin. The customer shall provide all necessary plumbing, carpentry work, or conduit wiring required to attach and install products ready for use.

#### 2. Permits

Customer shall obtain all permits and licenses required by federal, state/provincial or local authorities in connection with the construction, installation and operation of the products and related rules, regulations, shall bear any expense in obtaining same or in complying with any ordinances and statutes

#### 3. Radiation Protection

The customer or his contractor, at his own expense, shall obtain the service of a licensed radiation physicist to specify radiation protection. (X-Ray Tube output 150 KVp max.)

#### 4. Asbestos and Other Toxic Substances

Philips assumes no hazardous waste (i.e., PCB's in existing transformers) exists at the site. If any hazardous material is found, it shall be the sole responsibility of the customer to properly remove and dispose of this material at its expense. Any delays caused in the project for this special handling shall result in Philips time period for completion being extended by like period of time. Philips assumes that no asbestos material is involved in this project in any ceilings, walls or floors. If any asbestos material is found anywhere on the site, it shall be the customer's sole responsibility to properly remove and/or make safe this condition, at the customer's sole

#### 5. Labor

In the event local labor conditions make it impossible or undesirable to use Philips' regular employees for such installation and connection, such work shall be performed by laborers supplied by the customer, or by an independent contractor chosen by the customer at the customer's expense, and in such case, Philips agrees to furnish adequate engineering supervision for proper completion of the installation.

#### 6. Schedule

The general contractor should provide Philips with a schedule of work to assist in the coordination of delivery of Philips supplied products which are to be installed by the contractor and delivery of the primary equipment.

#### 7. Extended Installation or Turnkey Work by Philips

Any room preparation requirements for Philips equipment indicated on these drawings is the responsibility of the customer. If an extended installation or turnkey contract exists between Philips and the customer for room preparation work required by the equipment represented on these drawings, some of the responsibilities of the customer as depicted in these drawings may be assumed by Philips. In the event of a conflict between the work described in the turnkey contract workscope and these drawings, the turnkey contract workscope shall govern.

(00.0)

#### Minimum Site Preparation Requirements

A smooth efficient installation is vital to Philips and their customers. Understanding what the minimum site preparation requirements are will help achieve this goal. The following list clearly defines the requirements which must be fulfilled before the installation can begin.

- 1. Walls to be painted or covered, baseboards installed, floors to be tiled and/or covered, ceiling shall have grid tiles and lighting fixtures installed and operational.
- 2. Doors and windows, especially radiation protection barriers, installed and finished with locksets
- 3. All electrical convenience, conduit, raceway, knockouts, cable openings, chase nipples, and junction boxes installed and operational.
- 4. Incoming mains power operational and connected to room x-ray breaker.
- 5. 115v convenience outlets operational.
- 6. All support structure correctly installed. All channels, pipes, beams and/or other supporting devices should be level, parallel, and free of lateral or longitudinal movements.
- 7. All contractor supplied cables pulled and terminated.
- 8. A dust-free environment in and around the procedure room.
- 9. All HVAC (heating, ventilating and air conditioning) installed and operational as per specifications.
- 10. Architectural features such as computer floor, wood floor, casework, bulkheads, installed and finished. When technical cabinets are installed in a closet with doors, it is suggested that the customer install a temperature alarm in the event of an air conditional failure.
- 11. All plumbing installed and finished.
- 12. Philips does not install or connect developing tanks, automatic processors or associated equipment, built in illuminators, cassette pass boxes, loading benches and cabinets, lead protective screens, panels or lead glass window and frame. This is to be done by the customer/contractor.
- 13. Clear door openings for moving equipment into the building must be 42" (1067mm) W x 82" (2083mm) H min. 48" (1219mm) W x 82" (2083mm) H rec., Or larger contingent on an 8'-0" (2438mm) corridor width.
- 14. Countertop is 30" for seated height and 36" for standing height.

Once Philips has moved equipment into the suite and started the installation, the contractor shall schedule his work around the Philips installation team on site. It is suggested that a telephone be provided in the room to receive telephone calls. This would alleviate facility staff from answering calls for Philips personnel.

#### Remote Service Diagnostics

Medical imaging equipment to be installed by Philips Medical is equipped with a service diagnostic feature which allows for remote and on site service diagnostics. To establish this feature, a RJ45 type ethernet 10/100/1000 Mbit network connector must be installed as shown on plan. Access to customer's network via their remote access server is needed for Remote Service Network (RSN) connectivity. All cost with this feature are the responsibility of the customer.

(03.0)

#### **HVAC Requirement for General Equipment Locations**

Heating, ventilation, air conditioning requirement for general equipment locations must maintain temperature at 72° +/- 5° Fahrenheit (22° +/- 3° Celsius) and non-condensing relative humidity at 20% - 80% with 10% max. variation.

Equipment's designed airflow is from bottom to top and front to back. Please design the air handling in the rack cabinet equipment area accordingly.

(10.0)

#### **Electrical Requirements** Velara with PDU 4000

Power Output: 100KW

Supply Configuration: 3 phase, 3 wire power and ground, delta or wye

3 phase, 4 wire power with neutral + ground, wye

Nominal Line Voltage: 480 VAC, 60 Hz Branch Power Requirement: 225 KVA

Circuit Breaker: 3 pole, 125 Amps

(10.0)

## **Remote Control of Room Lighting**

The control of customer lighting must incorporate an electrical isolation system such as demonstrated on Sheet ED2. Lighting scheme is the responsibility of the customer.

(08.1)

Allura FD20 Ceiling VA, Albuquerque Albuquerque, NM

nager: Freund, Michael umber: 303-589-5113

Drawing Number
N-WES100655 C
Date Drawn: 1/28/2011
Quote: 1-R5TFEL Rev.3

AN

Project
Allura FD20 Ceiling
VA, Albuquerque
Albuquerque, NM er: Freund, Michael er: 303-589-5113 al.freund@philips.com

Philips Col Project Mana Contact Num Email: mich

Project Details
Drawing Number
N-WES100655 C
Date Drawn: 1/28/2011
Quote: 1-R5TFEL Rev.3
Order: None

AL

THIS SHEET IS PART OF THE DOCUMENT SET LISTED ON SHEET C1 AND SHOULD NOT BE SEPARATED.

**Equipment Legend** Furnished and installed by Philips Furnished by customer/contractor and installed by customer/contractor D Furnished by Philips and installed by contractor Existing Future G Optional item furnished by Philips **Equipment Designation** Detail Sheet -Weight Heat Load Description (lbs) (btu/hr) A SP Clea Stand with Short Arm 2535 1195 AD1 A (MSA) Angio Diagnost 7 with Pivot 1693 375 AD1 A MG Velara Generator 40E Cabinet 2971 AD2 510 A MP Peripherial 40E Cabinet 510 2049 AD2 D (PBK) PDU 4000/UPS 860 2450 AD2 A MA Mains 40E Cabinet 826 5464 AD2 A CY Viewing/Control 567 AD2 126 A DB Documentation Box - Mounted on Wheels 176 AD3 (Final location to be coordinated with custimer and/or local Philips Service.) A (ATY) Exam Room Auxiliary Box 1.7 AD3 A TV Six LCD Monitor Suspension with Exam Lamp 665 1020 AD3 A (MAV) Mavig Ceiling Track w/ Radiation Shield 167 350 AD4 A (IH) Interventional Hardware 73 2424 AD4 G (IVUS) s5i Imaging System (Volcano IVUS) (Transformer 82 AD6 and CPU located under counter) G SV s5i Imaging System (Junction Box) AD6 A XIM Xper Information Management 495 AD5 170 70 AD5 A FE Front End / Patient Care Monitor 25 A (IUPS) Interventional UPS 45.2 68 AD5 A NS Nurse Station 25 495 AD5 G (INJ) ACIST Injector on Pedestal 5118 AD5 A (VB1) Video Connection Box AD3 A (VB4) Video Connection Box AD3 A (EPN) EP Navigator (CPU located under counter) 2424 AD4 73 A XW Xcelera Workstation 110 716 AD6 G IC Injector Room Console 43 160 AD5 G RIC Injector Remote Panel 160 AD5 G (INJ) Medrad Universal T-Rail Bracket for Injector Head (Not shown on plan)

# **Equipment Layout**

Required Ceiling Height: 8' - 10  $\frac{5}{16}$ ", +  $\frac{1}{4}$ , -0" (2700mm, +6, -0) Ceiling Heights other than recommended may impact equipment functionality, consult with local Philips Service.



## **Planning Issues and Considerations**

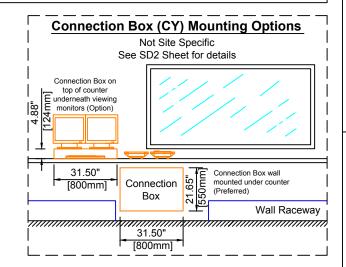
Cable run(s) from SP to MG, MP and MA must be able to take the most direct route. (Maximum cable length = MG=28.5', MP=33' and MA=36') (With extension cables, MG can be extended 13'=41.5' max)



The location and orientation of the system may require special ordering of a longer set of cables (Equipment Cabinets to "C"-arm). Verify availability of longer cables with Order Management.

#### **General Notes**

Counters and cabinetry shown to be supplied and installed by customer.



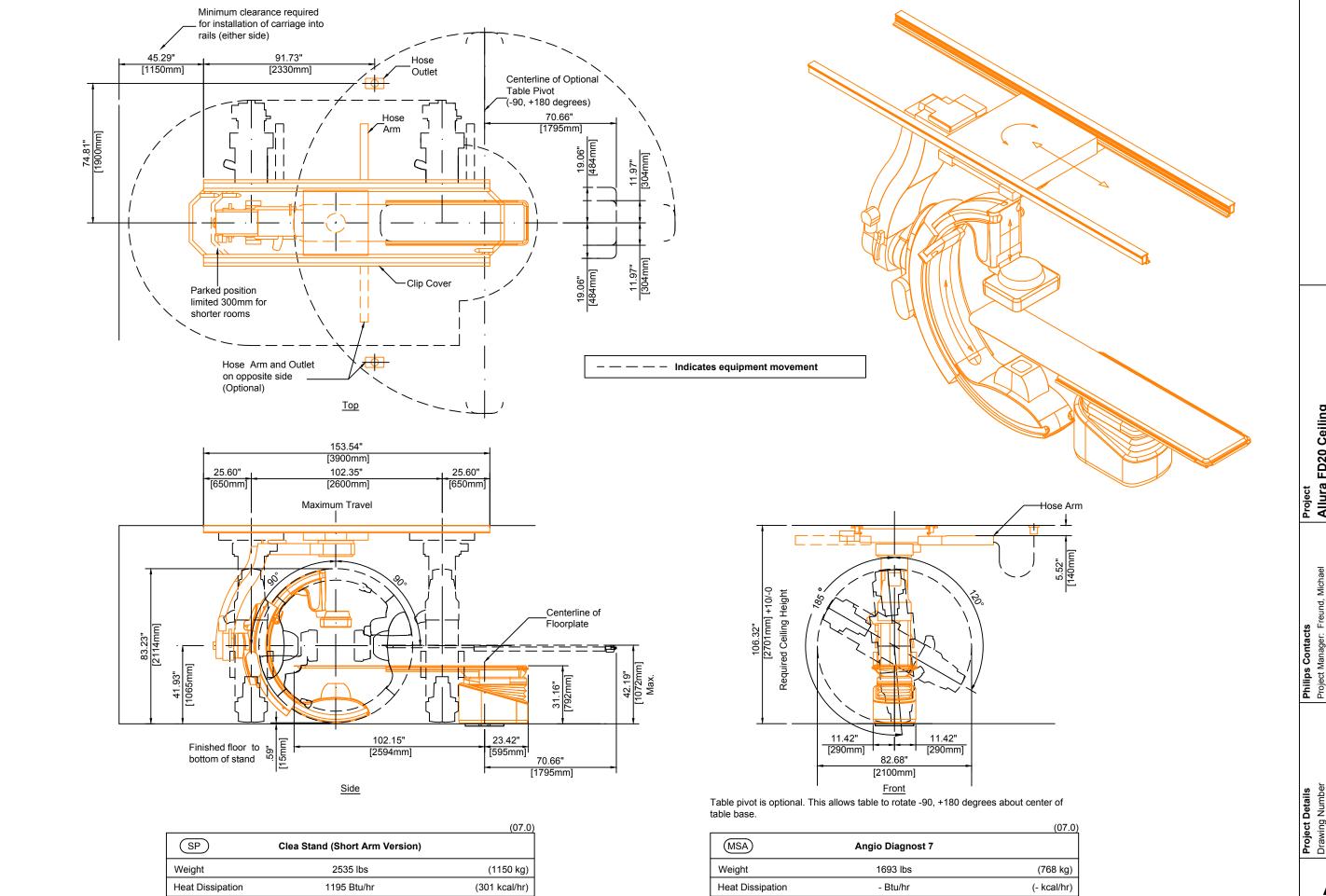
DB

Final location to be determined with customer. Coordinate with local Philips Service.

Project
Allura FD20 Ceiling
VA, Albuquerque
Albuquerque, NM

THIS SHEET IS PART OF THE DOCUMENT SET LISTED ON SHEET C1 AND SHOULD NOT BE SEPARATED.

**A1** 



PHILIPS

Project
Allura FD20 Ceiling
VA, Albuquerque
Albuquerque, NM

Contacts Manager: Freund, Michael Number: 303-589-5113

Project Manager: Freund,
Contact Number: 303-589
Email: michael.freund@pt

oject Details awing Number -WES100655 C ate Drawn: 1/28/2011

AD1



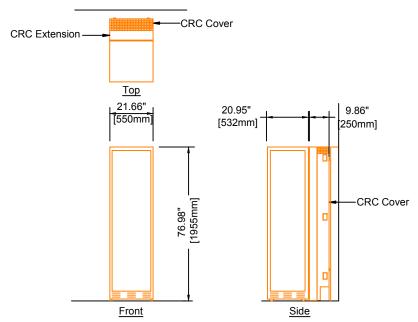




Freund, Michael 303-589-5113

Project Details
Drawing Number
N-WES100655 C
Date Drawn: 1/28/2011
Quote: 1-R5TFEL Rev.3
Order: None

AD2



Acoustic noise level: <= 48 dB(A) @ 1 meter in front of the rack and 1 meter high. (1 meter = 3.28')

MA	Mains 40E Cabinet	(10.0)
Weight	826 lbs	(375 kg)
Heat Dissipation	5464 Btu/hr	(1377 kcal/hr)

20.48"

[520mm]

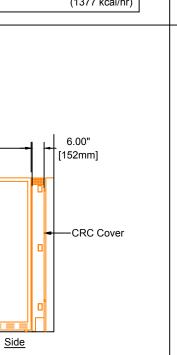
-CRC Cover

Top

21.66"

1550mm

Front

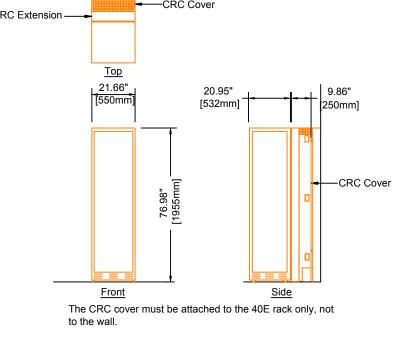


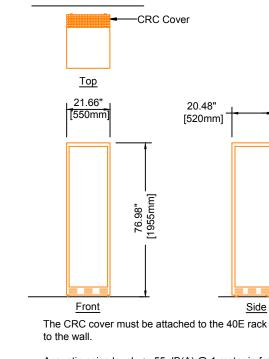
(10.0)

The CRC cover must be attached to the 40E rack only, not to the wall.

Acoustic noise level: <= 65 dB(A) @ 1 meter in front of the rack and 1 meter high. (1 meter = 3.28')

MP	Peripherial 40E Cabinet	(08.0
Weight	510 lbs	(232 kg)
Heat Dissipation	2049 Btu/hr	(516 kcal/hr)





Top

21.62"

[549mm]

Front

(PBK)

Weight

**Heat Dissipation** 

.89

57. [146

20.51"

[521mm]

<u>Side</u>

rack and 1 meter high. (1 meter = 3.28')

Acoustic noise level: <= 50 dB(A) @ 1 meter in front of the

PDU 4000/UPS

860 lbs

2450 Btu/hr

The CRC cover must be attached to the 40E rack only, not

10.83"

[275mm]

5.99"

[152mm]

36.00" [914mm]

Back

5.99"

[152mm]

1.50" dia.

knockout -plug

2.00" dia.

knockout

plug (2x)

1/2" / 3/4" dia. knockout plug (4x)

(08.0)

(391 kg)

(617kcal/hr)

6.00"

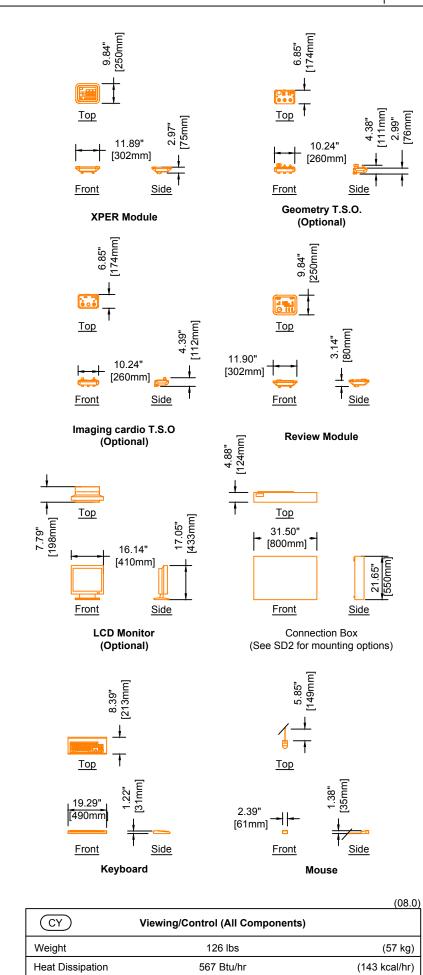
[152mm]

-CRC Cover

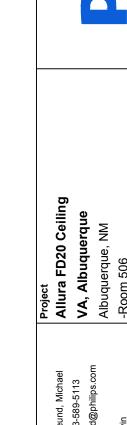
(00 O)

Acoustic noise level: <= 55 dB(A) @ 1 meter in front of the rack and 1 meter high. (1 meter = 3.28')

MG	Velara Generator 40E Cabinet	
Weight	510 lbs	(232 kg)
Heat Dissipation	2971 Btu/hr	(749 kcal/hr)







Philips Contacts
Project Manager: Freund, Michael
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Project Details

Drawing Number

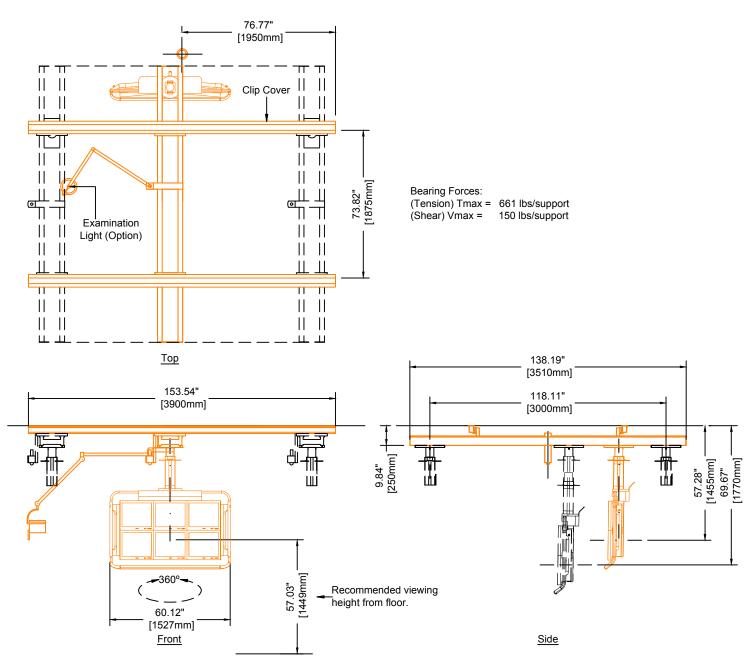
N-WES100655 C

Date Drawn: 1/28/2011

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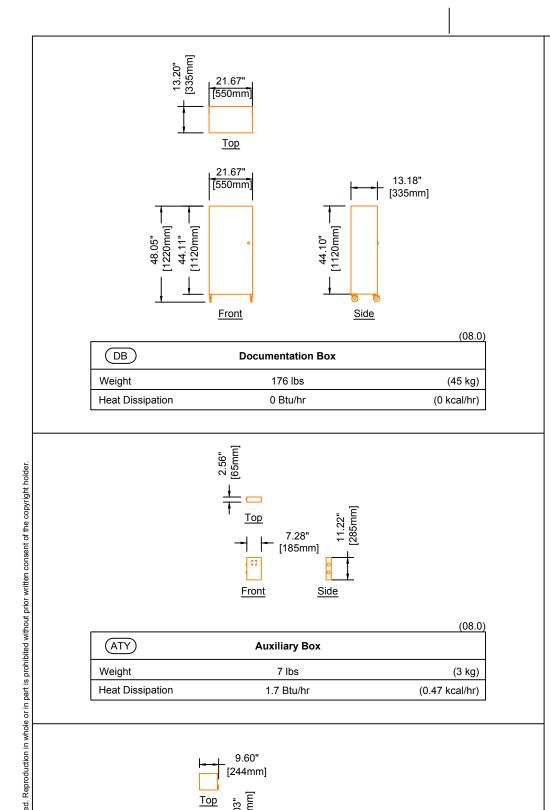
Order: None

AD3

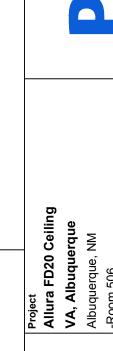


For swing labs, 2700mm long ceiling rails are delivered. Maximum longitudinal column travel = 2100mm. Weight shown is total weight including monitors, suspension, cabling and options.

		(03.0)
TV	Six LCD Monitor Suspension	
Weight	665 lbs	(288.5 kg)
Heat Dissipation	1020 Btu/hr	(258 kcal/hr)



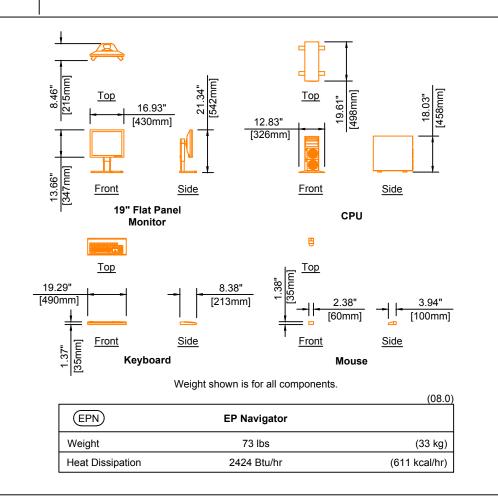


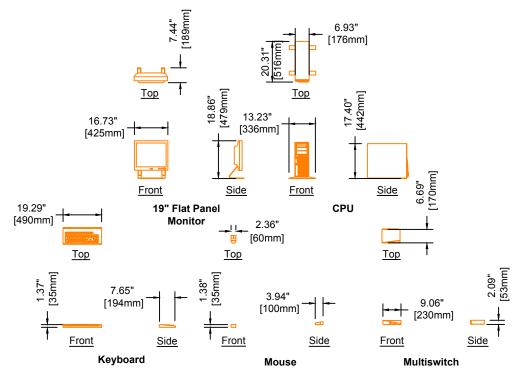


Freund, Michael 303-589-5113

AD4

98.42" [2500mm] 31.50" Max [800mm] Cross Support Radiation Shield Top 13.18" 86.24" [335mm] [2190mm] 2.75" -Maximum Travel 31.50" [800mm] Side Front 16.26" [413mm] 360° 7.06" Two, 12mm [180mm] (1/2") Dia. holes 3<sub>1.50</sub>" Bolt Forces: [800<sub>mm]</sub> (Tension) TMax = 908 lbs./bolt (Shear) VMax = 38 lbs./bolt 33.86" **Detail Cross** [860mm] Support Note: For Integris Systems, the post of the Rad Shield post needs to be mounted on the head end of the table in relation to the Monitor Suspension transverse carriage. (05.0)C4 MAV **Mavig Ceiling Track** Weight 167 lbs (76 kg) 350 Btu/hr **Heat Dissipation** (88 kcal/hr)



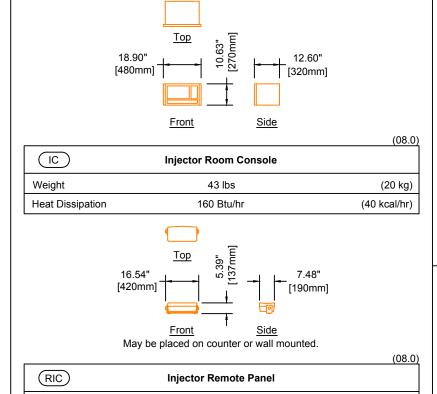


Weight shown is for all components.

		(08.0)
IH	Interventional Hardware (Flat Monitor)	
Weight	73 lbs	(33 kg)
Heat Dissipation	2,424 Btu/hr	(611 kcal/hr)



Albuquerque, NM

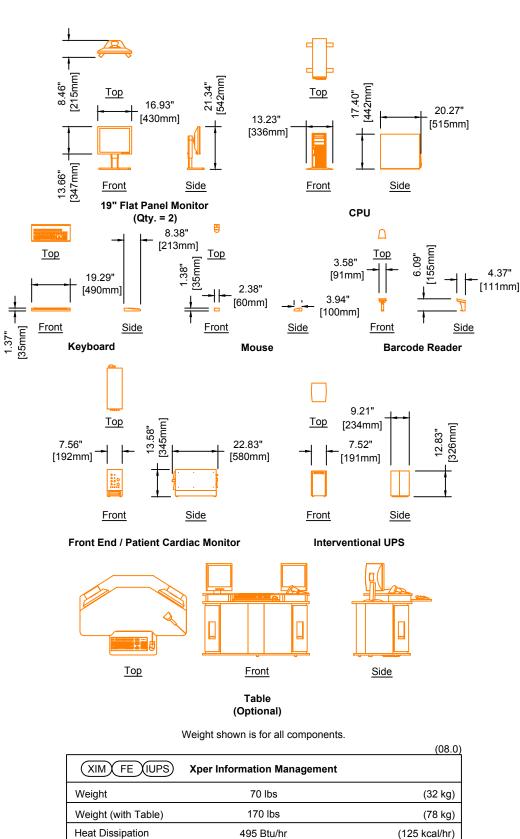


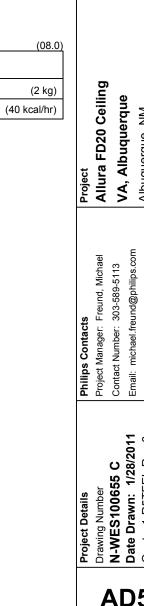
5 lbs

160 Btu/hr

Weight

**Heat Dissipation** 





AD5

THIS SHEET IS PART OF THE DOCUMENT SET LISTED ON SHEET C1 AND SHOULD NOT BE SEPARATED.

Side

Top

Front

**ACIST Injector on Pedestal** 

- lbs

5118 Btu/hr

6.93" [176mm]

8.38" [213mm]

Weight shown is for all components.

**Nurse Station** 

25 lbs

495 Btu/hr

<u>Top</u>

Front

<u>Top</u>

**Front** 

CPU

2.38"

. [60mm]

Mouse

27.33" | [694mm]

Side

<u>Side</u>

Side

3.94"

-[100mm]

(0.80)

(12 kg)

(125 kcal/hr)

(01.0)

(- kg)

(1290 kcal/hr)

35.63" [905mm]

(INJ)

Weight

**Heat Dissipation** 

Top

Front

Top

Front

19.29" [490mm]

(NS)

Weight

**Heat Dissipation** 

16.93" [430mm]

[213mm]

19" Flat Panel

Monitor

Keyboard

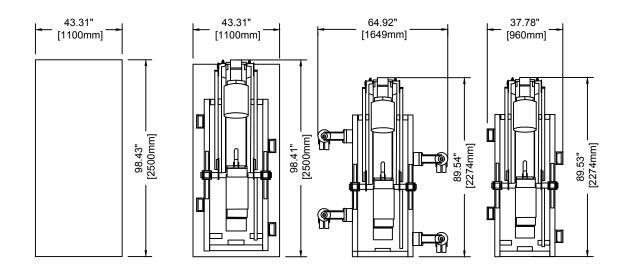




AD6

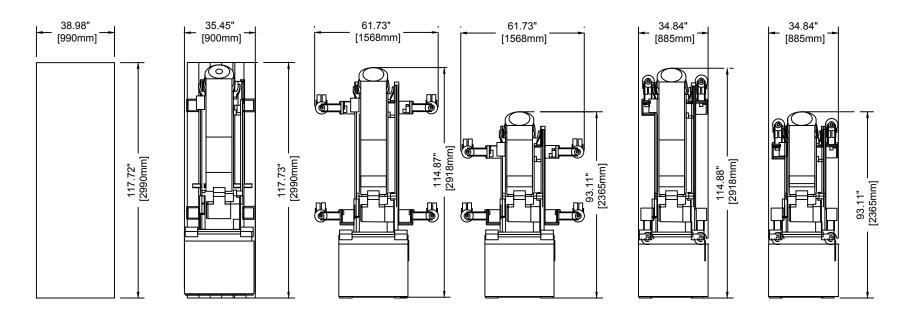
17.75" 7.12" [181mm] 6.75" [439mm] [171mm] 8.50" [216mm] Side Front Philips 19" LCD Color Monitor APC Smart UPS 1500 (Optional) 0 U Top Top Top [213mm] 17.67" 2.39" [449mm] [61mm] 19.29" [490mm] 5.31" [135mm] 7.75" [197mm] Front <u>Side</u> Keyboard Mouse/Searchwheel **Dell Mini Tower** Weight shown is for all components. (XW) **Xcelera Workstation** Weight 110 lbs (50 kg) 716 Btu/hr **Heat Dissipation** (181 kcal/hr) 18.84" [479mm] 10.35" [263mm] 5.08" [129mm] Top 16.73" 6.45" [425mm] + [164mm] 15.52" 7.25" [184mm] --[394mm] 7.07" [180mm] Side Front Front Front Side **Control Room Controller** s5i Printer 19" LCD Monitor Top <u>Top</u> Top 18.50" 7.01" 6.11" [155mm] 9.35" [470mm] [178mm] . [238mm] 6.74" 10.50" [171mm] 13.18" [335mm] Side Front Side Front <u>Front</u> **PC Module Junction Box Isolation Transformer** Weight shown is for all components. (0.80)(IVUS) s5i Imaging System (Volcano IVUS Workstation) Weight 82 lbs (37 kg) **Heat Dissipation** - Btu/hr (- kcal/hr) (SV) s5i Imaging System (Junction Box) (- kg) Weight - lbs (- kcal/hr) **Heat Dissipation** 

#### **Detail - Poly Clea Ceiling (C-ARM) Transport Details**



		Transport Possibilities						
Crate Pallet Klick Wheels Wide Skateboards								
Height	77.95" (1980mm)	76.22" (1936mm)	69.02" (1753mm)	77.76" (1975mm)				
Weight	2050 lb (930 kg)	1940 lb (880 kg)	2061 lb (935 kg)	1764 lb (800 kg)				

#### **Detail - Poly Clea Ceiling (L-ARM) Transport Details**



			Transport Possibilities			
	Crate	Pallet	Klick Wheels Wide	Klick Wheels Wide Elevator	Klick Wheels Small	Klick Wheels Small Elevator
Height	57.09" (1450mm)	54.80" (1392mm)	49.25" (1251mm)	79.53" (2020mm)	49.25" (1251mm)	79.53" (2020mm)
Weight	2094 lb (950 kg)	1973 lb (895 kg)	1896 lb (860 kg)	1896 lb (860 kg)	1896 lb (860 kg)	1896 lb (860 kg)

PHILIPS

Project
Allura FD20 Ceiling
VA, Albuquerque
Albuquerque, NM

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C Contact Numbe 8/2011 Email: michael Rev.3

Drawing Number
N-WES100655 C
Date Drawn: 1/28/2(
Quote: 1-R5TFEL Re

AD7

Freund, Michael

SN

#### **Equipment Support Information**

#### 1. General

The customer shall be solely responsible, at its expense, for preparation of the site, including any required structural alterations. The site preparation shall be in accordance with this plan and specifications, the architectural/construction drawings and in compliance with all safety and building codes. The customer shall be solely responsible for obtaining all construction permits from jurisdictional authority.

#### 2. Equipment Anchorage

Philips provides, with this plan and specifications, information relative to equipment size, weight, shape, anchoring hole locations and forces which may be exerted on anchoring fasteners. The customer shall be solely responsible, through the engineer of record for the building, to provide on the architectural/construction drawings, information regarding the approved method of equipment anchoring to floors, wall and/or ceiling of the building. Any anchorage test required by local authority shall be the customer's responsibility. Stud type anchor bolts should not be specified as they hinder equipment removal for service. Consult with Philips service prior to specifying anchor methods.

#### 3. Floor Loading and Surface

Philips provides, with this plan and specifications, information relative to size, weight and shape of floor mounted equipment. The customer shall be solely responsible, through the engineer of record for the building, to provide on the architectural/construction drawings confirmation of the structural adequacy of the floor upon which the equipment will be placed. Any load test required by local authority, shall be the customer's responsibility. The floor surface upon which Philips equipment is to be placed/anchored shall be flat and level to within plus or minus 1/16 inch (2mm) over a length of 39" (1m).

#### 4. Ceiling Support Apparatus

- a. Philips provides, with this plan and specifications, information relative to size, weight and shape of ceiling supported equipment. The customer shall be solely responsible, through the engineer of record for the building, to provide on the architectural/construction drawings, information regarding the approved method of structural support apparatus, fasteners and anchorage to which Philips will attach equipment. Any anchorage and/or load test required by local authority shall be the customer's responsibility.
- b. Contractor to clearly mark Philips equipment longitudinal centerline on bottom of each structural support.
- c. The structural support apparatus surface to which Philips equipment is to be attached, shall have horizontal equipment attachment surfaces parallel, square and level to within plus or minus 1/16" per 39" (2mm per meter).
- d. Any drilling and/or tapping of holes required to attach Philips equipment to the structural support apparatus shall be the responsibility of the customer.
- e. Fasteners/anchors (i.e., bolts, spring nuts, lock and flat washers) and strip closures shall be provided by the

Lighting fixtures shall be placed in such a position that they are not obscured by equipment or its movement, nor shall they interfere with Philips ceiling rails and equipment movement or otherwise adversely affect the equipment. Such lighting fixture locations shall be the sole responsibility of the customer.

There shall be no obstructions that project below the finished ceiling in the area covered by ceiling suspended equipment travel.

#### 7. Seismic Anchorage (For Seismic Zones Only)

All seismic anchorage hardware, including brackets, backing plates, bolts, etc., shall be supplied and installed by the customer/contractor unless otherwise specified within the support legend on this sheet. Installation of electronic cabinets to meet seismic anchorage requirements must be accomplished using flush mounted expansion type anchor/bolt systems to facilitate the removal of a cabinet for maintenance. Do not use threaded rod/adhesive anchor systems. Consult with Philips regarding any anchor system issues.

#### 8. Floor Obstructions/ Floor Coverings

There shall be no obstructions on the floor (sliding door tracks, etc.) in front of the Philips technical cabinets. Floor must be clear to allow cabinets to be pulled away from the wall for service. Contractor to verify with Philips the preferred floor covering installation method.

In a worst case situation the dynamic bolt force of a floor or ceiling must be multiplied by factor 4. (static bolt force of the ceiling must be multiplied by factor 8). All safety factors are included in the bearing force values in sheet SD1.

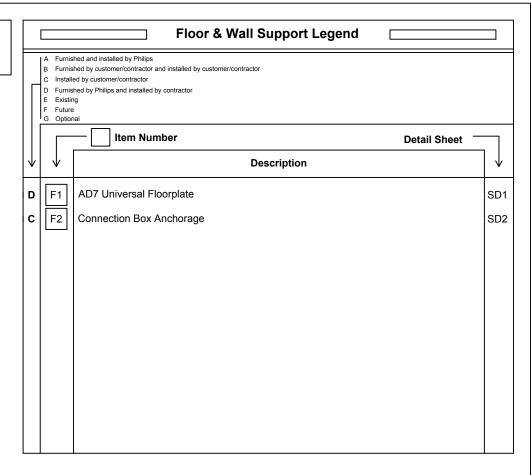
#### 10. Stiffness Requirements of Ceiling

stiffness: 10,000,000 Newton/meter - 57.1 klb/in

stiffness: 20,000,000 Newtonmeter/Rad - 177615 klbin/Rad

The maximum deflection on the Philips rails must not exceed 1mm (0.04") caused by the static load (weight) of the ceiling stand.

See S1 for Floor & Wall Support Layout.



See S2 for Ceiling Support Layout.

**Ceiling Support Legend** Furnished by customer/contractor and installed by customer/contractor Installed by customer/contractor Furnished by Philips and installed by contractor Future Item Number **Detail Sheet** Description C1 SD1 SD2 SD2 2 - Philips Clea Rails C2 2 - Philips Monitor Equipment Rails SD2 Unistrut (P1001 or equal) - Mounted Flush with Finished Ceiling C4 AD4 Mavig Ceiling Track

Customer/Contractor shall recommend and/or provide equipment anchoring systems (I.E. "Hilti", "Redhead", etc.) based upon specified "pull" forces (See sheet SD1) and wall/ceiling/floor compositions.

Project
Allura FD20 Ceiling
VA, Albuquerque
Albuquerque, NM

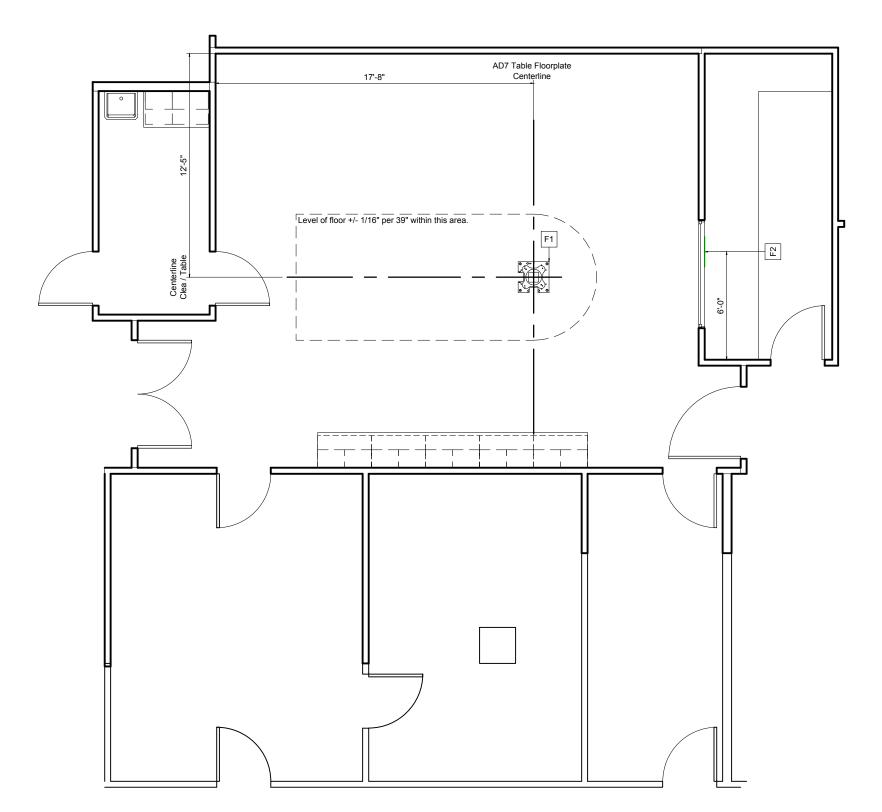
Philips Contacts
Project Manager: Freund, Michael
Contact Number: 303-589-5113
Email: michael.freund@philips.com

SL

# Floor & Wall Support Layout

Required Ceiling Height: 8' - 10  $\frac{5}{16}$ ", +  $\frac{1}{4}$ , -0" (2700mm, +6, -0) Ceiling Heights other than recommended may impact equipment functionality, consult with local Philips Service.





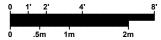
Refer to Floor/Wall Support Legend -Sheet SL

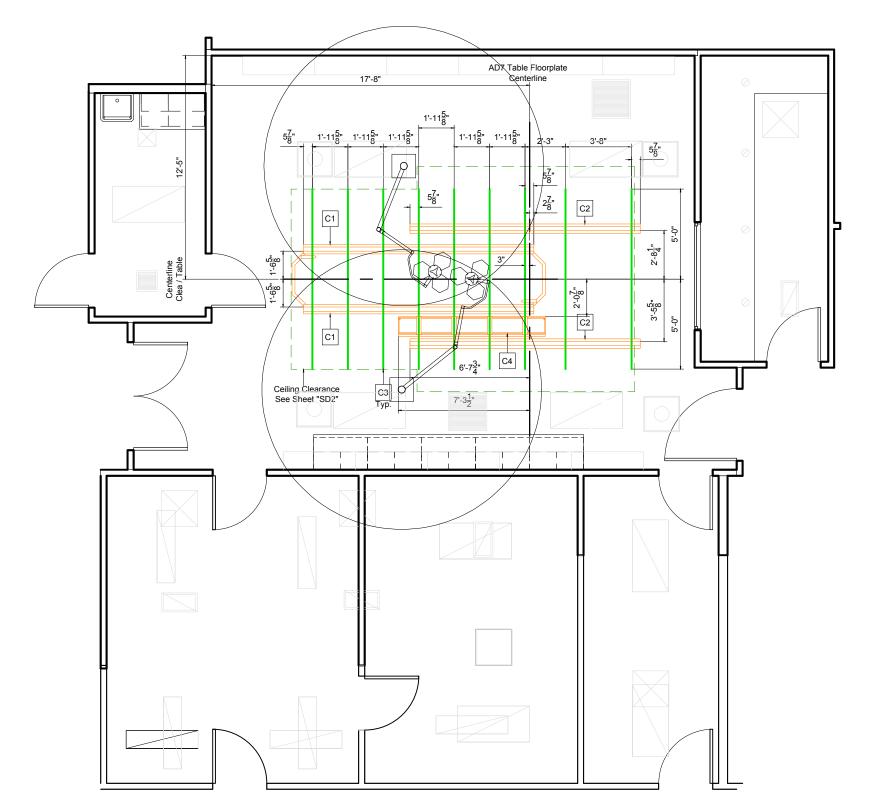
Project
Allura FD20 Ceiling
VA, Albuquerque
Albuquerque, NM

**S1** 

# **Ceiling Support Layout**

Required Ceiling Height: 8' - 10  $\frac{5}{16}$ ", +  $\frac{1}{4}$ , -0" (2700mm, +6, -0) Ceiling Heights other than recommended may impact equipment functionality, consult with local Philips Service.





Refer to Ceiling Support Legend -Sheet SL PHILIPS

Allura FD20 Ceiling
VA, Albuquerque
Albuquerque, NM
-Room 506

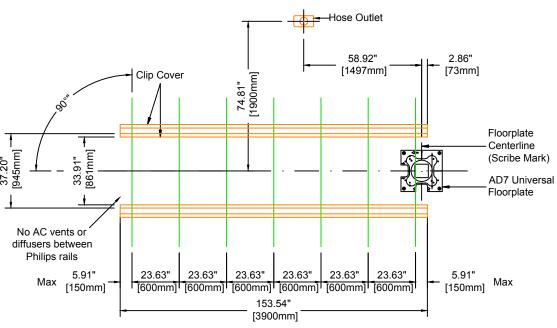
hilips Contacts
roject Manager: Freund, Michael
ontact Number: 303-589-5113
mail: michael freund@nhilins.com

ls Philips C Project Ma (1728/2011 Email: mir

Daving Number
N-WES100655 C
Date Drawn: 1/28/2

**S2** 

## **Detail - Structural Allura FD20 (Ceiling)**



685mm (27") maximum allowed distance between unistrut (seven unistrut required) Floorplate supplied by Philips / installed by Customer. Counterbored holes are sized for  $\frac{1}{2}$  anchors per Seismic requirements.

Clea

Clea Forces: Tmax = 2931 lbs/support Vmax = 1227 lbs/support **AD7 Table** 

Floorplate to Floor Bolt Forces: (Tension) Tmax = 1950 lbs/bolt Vmax = 776 lbs/bolt (Shear)

Note: The bearing force shown for the Clea is the maximum instantaneous equipment bearing load that can result from abusive use of the system. This force can occur at two locations simultaneously on the same Unistrut (or equal) rail. If seismic forces must be considered, please refer to the seismic calculation sheets provided by Philips for the specific system components.

(0.80)

(0.80)

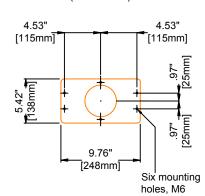
#### **Detail - Cable Hose Outlet** (Not to scale)

(Tension)

C1 F1

35.38" ± .06" [899mm] ± 1.5mm

## **Detail - Clip Rail Spacing**

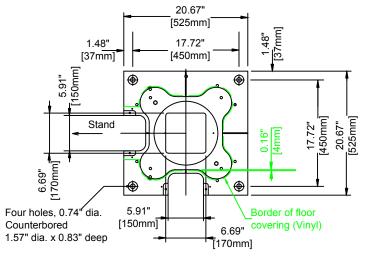


#### **Detail - AD7 Universal Floorplate - Notes for Installation**

(Not to scale)

1. 1.18" thick floorplate, flush mounted with top of slab.

2. Level within 1.5mm (1/16") across surface of plate.



#### Floorplate mounting to the building:

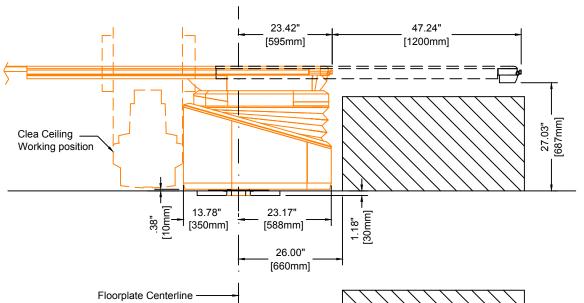
In case threaded rods are used, the nut may protrude above the floorplate surface. DO NOT GRIND DOWN THE NUT, use the procedure stated below.

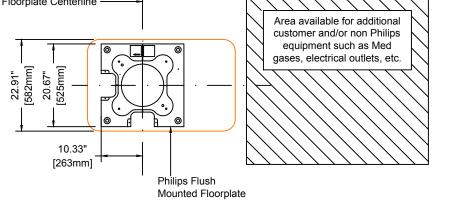
- 1. Use Jam nuts M16 (h=8.0 mm) or 5/8" (h=9.5 mm)
- | F1 | 2. Use only 1 washer.
  - 3. Use loctite 243 instead of a lock washer.

#### 4. Use fastening torque wrench between 40 and 50 Nm.

#### Detail - Clea Ceiling / AD7 Table, Fixed/Pivot Base - Clearance Area

(Not to scale)





(08.0)

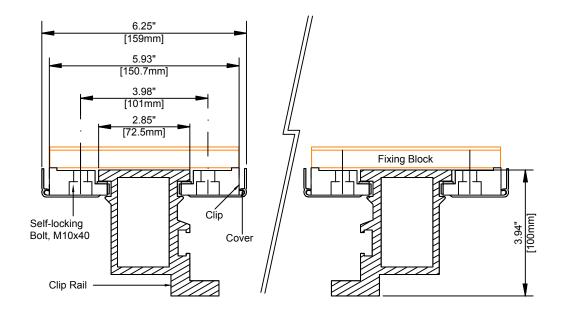
Project
Allura FD20 Ceiling
VA, Albuquerque
Albuquerque, NM

Freund, Michael 303-589-5113

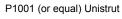
SD1

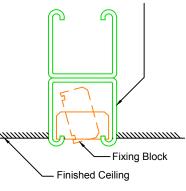
#### **Detail - Clip Rail Cross-Section**

(Not to scale)

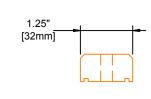


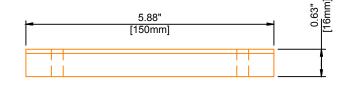
#### Detail - Fixing Block for Philips Ceiling Rails (Clip Rails)





- \* Philips does not specify the overhead equipment support structure. Unistrut (or equal) may or may not be used. If Unistrut are used, it is up to Unistrut and the structural engineer for the project to determine which of it's products are appropriate for each project.
- \* Finished ceiling must **NOT** be lower than the bottom of the Unistrut in order to prevent damage to the finished ceiling during the installation of clip rails.
- \* Nothing shall be attached to the Unistrut with any fastener that protrudes into the unistrut which would interfere with positioning of the fixing block.
- \* Fixing blocks for Philips ceiling rails (Clip rails) are designed to be installed in P1001 Unistrut.
- \* The inside of the Unistrut must be clear of obstructions (including paint).
- \* Unistrut elements must be rigid and comply with the ceiling structure requirements. See SN sheet, line #4 "Ceiling Support Apparatus".
- \* Finished ceiling height to be mounted 1/4" above bottom of Unistrut.

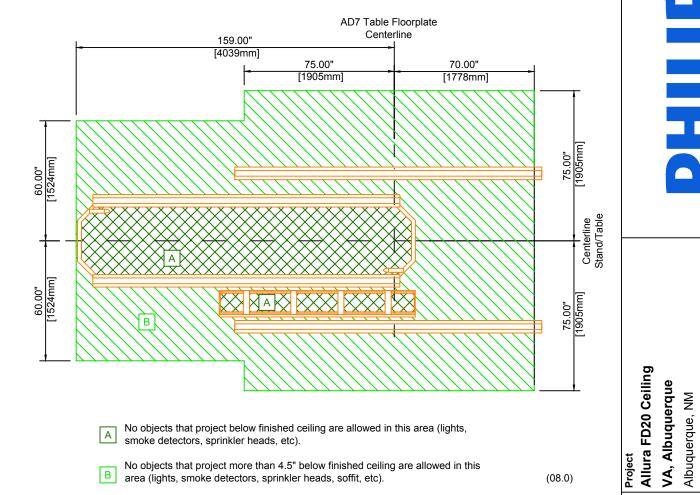




C1 C2 C3

#### Detail - Restricted Ceiling Area for Objects that Project Below Finished Ceiling

(Not site specific)



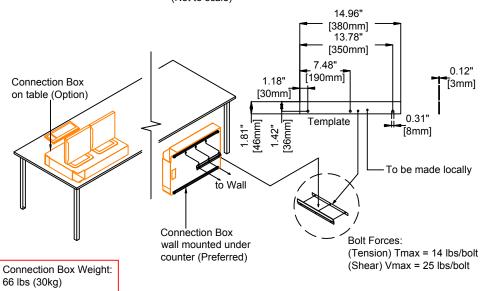
No objects that project below finished ceiling are allowed in this area (lights, A No objects that project below .....es smoke detectors, sprinkler heads, etc).

No objects that project more than 4.5" below finished ceiling are allowed in this area (lights, smoke detectors, sprinkler heads, soffit, etc).

(08.0)

### **Detail - Connection Box Mounting Options**

(Not to scale)



F2

Connection box needs to be electrically isolated from building steel. Locate box within 6.5' (2 M) of the review module and monitors.

(08.0)

Drawing Number
N-WES100655 C
Date Drawn: 1/28/2011
Quote: 1-R5TFEL Rev.3
Order: None

Freund, Michael

SD<sub>2</sub>

(08.1)

#### **Emergency Power**

Philips does not require equipment to be on emergency power. If the customer deems it necessary for the equipment to be supplied with emergency power, the following specifications must be applied:

The circuit protection for emergency power should be capable of handling a high initial surge of approximately 40 amps.

The transfer switch must be double actuator type with a minimum time delay of 400 milliseconds in both directions (utility to emergency emergency to utility). This time is required to allow filters to dissipate their stored energy before a different mains voltage is applied. Russelectric type RMTD, Asco Series 7000 delayed transition transfer switch or equivalent is recommended.

To reduce the emergency power generator load demand, Philips equipment can be put into a lower power mode (5.5kVA fluoroscopy + 4kVA geometry) of operation by the connection of a potential free closure from the transfer switch. This potential free, normally open contact, has to be rated for 24VDC/100mA. For Philips cardio/vascular Integris equipment, the two wires from this contact have to be routed to the equipment area and connected to the System Coordinator cabinet (MA).

(03.1)

#### **Electrical Requirement Notes for Systems with PDU**

Electrical power distribution at the facility shall comply with:

Utilization voltages per ANSI C84.1 - 1982 range A.

Voltage to be supplied is 3 phase, delta or wye.

Phase conductors to be size for instantaneous voltage drop per NEC 517 - 73 and Philips recommendations.

On systems with a PDU, the ground conductor for the power feeder shall never be less than  $\frac{1}{2}$  the cross-sectional area of the phase conductors and never smaller than #5 AWG.

Metal conduit shall not be used as the equipment ground conductor

ANSI / NFPA 70 - National Electrical Code

Article 250 - Grounding

Article 517 - Healthcare Facilities

ANSI / NFPA 99 - Healthcare Facilities

NEMA standard XR9 - Power Supply Guideline for X-ray Machines

#### **Power Quality Guidelines**

- 1. Power supplied to medical imaging equipment must be separate from power feeds to air conditioning, elevators, outdoor lighting, and other frequently switched or motorized loads. Such loads can cause waveform distortion and voltage fluctuations that can hinder high quality imaging.
- 2. Equipment that utilizes the facility power system to transmit control signals (especially clock systems) may interfere with medical imaging equipment, thus requiring special filtering.
- 3. The following devices provide a high impedance, nonlinear voltage source, which may affect image quality:

Static UPS systems, Series filters, Power conditioners, and Voltage regulators.

Do not install such devices at the mains supply to medical imaging equipment without consulting Philips installation or service personnel.

4. Line impedance is the combined resistance and inductance of the electrical system and includes the impedance of the power source, the facility distribution system, and all phase conductors between the source and the imaging equipment. Philips publishes recommended conductor sizes based on equipment power requirements, acceptable voltage drops, and assumptions about the facility source impedance. The minimum conductor size is based on the total line impedance and NEC requirements. Unless impedance calculations are performed by an electrical engineer, the recommended values must be used

#### **General Electrical Information**

#### 1. General

The customer shall be solely responsible, at its expense, for preparation of the site, including any required electrical alterations. The site preparation shall be in accordance with this plan and specifications, the architectural/construction drawings and in compliance with all safety and electrical codes, the customer shall be solely responsible for obtaining all electrical permits from jurisdictional authority.

#### 2 Materials and Labor

The customer shall be solely responsible, at its expense, to provide and install all electrical ducts, boxes, conduit, cables, wires, fittings, bushing, etc., As separately specified herein.

#### 3. Electrical Ducts and Boxes

Electrical ducts and boxes shall be accessible and have removable covers. Floor ducts and boxes shall have watertight covers. Ducts shall be divided into as many as three separate channels by metal dividers, separately specified herein, to separate wiring and/or cables into groups as follows: Group A: power wiring and/or cables. Group B: signal and/or data and protective ground wiring and/or cables. Group C: x-ray high voltage cables, the use of 90 deg. ells is not acceptable. On ceiling duct and wall duct use 45 deg. bends at all corners. All intersecting points in duct to have cross over tunnels supplied and installed by contractor to maintain separation of cables.

#### 4. Conduit

Conduit point - to - point runs shall be as direct as possible. Empty conduit runs used for cables may require pull boxes located along the run. Consult with Philips. A pull wire or cord shall be installed in each conduit run. All conduits which enter duct prior to their termination point must maintain separation from other cables via use of dividers, cross over tunnels, or conduit supplied and installed by contractor from entrance into duct to exit from duct. Do not use flex conduit unless approved by Philips Service.

#### 5 Conductors

All conductors, separately specified, shall be 75°C stranded copper, rung out and marked.

#### 6. Disconnecting Means

A disconnecting means shall be provided as separately specified.

#### 7. Warning Lights and Door Switches

"X-ray on" warning lights and x-ray termination door switches should be provided at all entrances to x-ray rooms as required by code.

#### 8. Dimmer Switches

X-ray room lights should be provided with dimmer switches.

(03.0)

#### **Electrical Notes**

- 1. The contractor will supply & install all breakers, shunt trip and incoming power to the breakers. The exact location of the breakers and shunt trips will be determined by the architect or contractor.
- 2. The contractor shall supply & install all pull boxes, raceways, conduit runs, stainless steel covers, etc. Conduit/raceways must be free from burrs and sharp edges over its entire length. A Greenlee pull string/measuring tape (part no. 435, or equivalent) shall be provided with conduit runs.
- 3. All pre terminated, cut to length cables, will be supplied and installed by Philips. All cables to the breakers, will be supplied and installed by the contractor, subject to local arrangements.
- 4. Provide and install 4 2" (50 mm) diameter. Chase nipples between adjacent wall boxes.
- 5. Electrical raceway shall be installed with removable covers. The raceway should be accessible for the entire length. In case of non accessible floors, walls and ceilings, an adequate number of access hatches should be supplied to enable installation of cabling. Approved conduits may be substituted. All raceways will be designed in a manner that will not allow cables to fall out of the raceway when the covers are removed. In most cases, this will require above - ceiling raceway to be installed with the covers removable from the top. Raceway system as illustrated on this drawing are based upon length of furnished cables. Any changes in routing of raceway system could exceed maximum allowable length of furnished cables. Conduit or raceway above - ceiling must be kept as near to finished ceiling as possible.
- 6. Conduit sizes shall be verified by the architect, electrical engineer or contractor, in accordance with local or National Electrical Codes, whichever govern.
- 7. Convenience outlets are not illustrated. Their number and location are to be specified by the customer/architect.
- 8. Electrical contractor shall install ground bond wires at conduit openings within wall boxes as required by national and local electrical codes. Ground bond wires and lugs shall be installed in such a way to prevent the inadvertent contact with the installed Philips equipment to maintain the Philips Equipotential Grounding Configuration and maintain patient safety. Install a #6 AWG stranded ground wire in the conduits from the Main Disconnect (CB) to the PDU and from the PDU to the MG wall box.
- 9. If the Philips system includes a PDU, the PDU is a "Separately Derived Source" by NEC standards, and must be ground according to NEC article 250-30.
- 10. Philips equipment must be electrically isolated from conduits, raceways, ducts, etc.
- 11. Acceptable cross-overs: Walker DuctCat. #RPD10-TUN-3C /, Square D Cat. #RSV122ST .

Allura FD20 Ceiling

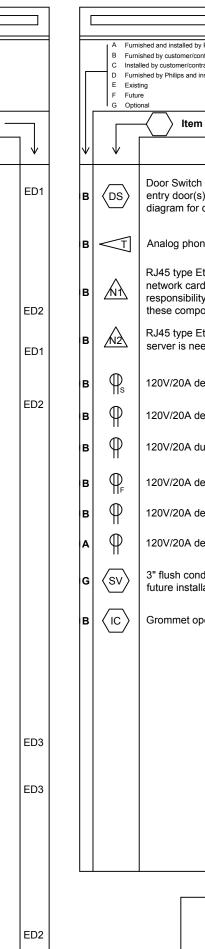
VA, Albuquerque Albuquerque, NM

Freund, Michae 303-589-5113 Philips Contacts
Project Manager: Fre
Contact Number: 30:
Email: michael.freun

Project Details
Drawing Number
N-WES100655 C
Date Drawn: 1/28/2011
Quote: 1-R5TFEL Rev.3
Order: None

EN

(10.0)



**Detail Sheet** 

**Electrical Legend** A Furnished and installed by Philips B Furnished by customer/contractor and installed by customer/contracto Installed by customer/contractor Furnished by Philips and installed by contractor Item Number **Detail Sheet** Description Door Switch - 120V/5A switch limited to open when door is open. Mount in upper corner on strike side of main entry door(s) (Cooper no. 1665 or equivalent), if required by local code or physicist of record. See Sheet "ED2" ED2 diagram for connection details. (Not shown on plan) Analog phone line for service (convenience). (Not shown on plan) RJ45 type Ethernet 10/100/1000 Mbit network connector with access to customer's network. Locate within 10' of network card. Network fiber optic and Ethernet cabling, connectors, wall boxes, patch panels, etc. are the responsibility of the purchaser. Philips assumes no responsibility for procurement, installation, or maintenance of these components. RJ45 type Ethernet 10/100/1000 Mbit network connector. Access to customer's network via their remote access N1 server is needed for Remote Service Network (RSN) connectivity. 120V/20A dedicated duplex outlet for service in the equipment room. (Not shown on plan) 120V/20A dedicated duplex outlet for IH (Interventional Hardware). 120V/20A duplex outlet for each of the wall video boxes (VB1~ VB4). 120V/20A dedicated duplex outlet for Pedestal Injector. 120V/20A dedicated duplex outlet for IUPS (Interventional UPS). 120V/20A dedicated duplex outlet for NS (Nurse Station). 3" flush conduit opening for IVUS system cables. Opening must be covered if the IVUS system is planned for ED3 future installation. See Sheet "E1" for exact location. Grommet opening on "WR2". Exact size and location to be determined by local Philips Service.

See E1 - E3 sheets for conduit and raceway requirements.

 $\langle WL \rangle$ 

Philips Service.

Furnished and installed by Philips

Installed by customer/contractor

Existing

Future

G Optiona

СВ

 $\langle st \rangle$ 

(GE)

PBG

(PBK)

**D** (MP)

(CY)

WM VB1 VB2 VB3

(MSA)

(SP)

 $\langle TV \rangle$ 

(WR1)

 $\langle R1 \rangle$ 

(ATY)

(HCU)

Service).

box.

plan)

Furnished by Philips and installed by contractor

Furnished by customer/contractor and installed by customer/contractor

Item Number

bottom of "WR2" when possible.

relocation with local Philips Service.

contractor to cut top and/or bottom of box as required.

**Electrical Legend** 

Description

480V, 3 phase 125 AMP circuit breaker with shunt trip. Run power from breaker to "PBK", leaving an 8' tail at

Shunt Trip (emergency off) - Large mushroom-head button on remote control station with contacts to operate

Central ground busbar mounted in a 12"W x 12"H x 4"D pull box with hinged cover, surface mounted to the

A.F.F. to bottom of box, provide (1) 1 1/2" and (2) 2" conduits through "PBK" cover plate to PDU cabinet.

19 1/4"W x 67"H x 4"D flanged-edge terminal wall box, surface mounted 75" A.F.F. to top of box. General

Grommet opening on "WR1". Approximate location shown is recommended and may be changed - verify

10"W x 10"L x 6"D floor box, under the floor with a 5" core drill up to the underside of AD7 universal floorplate.

18"W x 18"L x 6"D ceiling box, flush mounted with removable screw-type cover plate. Provide one 3" diameter

18"W x 18"L x 6"D ceiling box, flush mounted with removable screw-type cover plate. Provide a 2 1/2" round

cutout (Two 2 1/2" round cutouts are required for systems with two monitor carriages - verify with local Philips

10"W x 4"D wall raceway, surface mounted with removable screw-type cover plate. "WR1" is at finished floor.

"WR2" is at 75" A.F.F. to bottom of raceway. "WR1" may need to be cut at the location of the "CY" connection

10"W x 4"D riser duct with removable screw-type cover plate, surface mounted from wall raceway to wall box.

Auxiliary Box - 6"W x 6"H x 4"D wall box, flush mounted 70" A.F.F. to the bottom of the box with removable

screw-type cover plate. Location shown is recommended and may be changed - verify relocation with local

Warning Light - Provide a surface or flush mounted light fixture above door to indicate when X-ray is on, if required

by local code or physicist of record. See Sheet "ED2" diagram for connection details. (Not shown on plan)

(Customer's) Hard Copy Unit - Contact manufacturer for power requirements. (Not shown on plan)

18"W x 18"H x 8"D flanged-edge terminal wall box with removable screw-type cover plate, surface mounted 22"

Location per local code or owner requirements. (Not shown on plan)

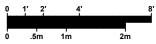
Ground electrode per N.E.C. 250-26, building steel preferred. (Not shown on plan)

"PBK", and from "PBK" to "MG", leaving an 8' tail at each end. See Sheet "ED1" for power quality requirements.

feature of "CB" (if required by local code or owner, and mandatory for VA and D.O.D installations). (Not shown on

# **Electrical Layout**

Required Ceiling Height: 8' - 10  $\frac{5}{16}$ ", +  $\frac{1}{4}$ , -0" (2700mm, +6, -0) Ceiling Heights other than recommended may impact equipment functionality, consult with local Philips Service.





Refer to Electrical Legend - Sheet EL and Raceway/Conduit - Sheet E2-E3

PHILIPS

Project
Allura FD20 Ceiling
VA, Albuquerque
Albuquerque, NM

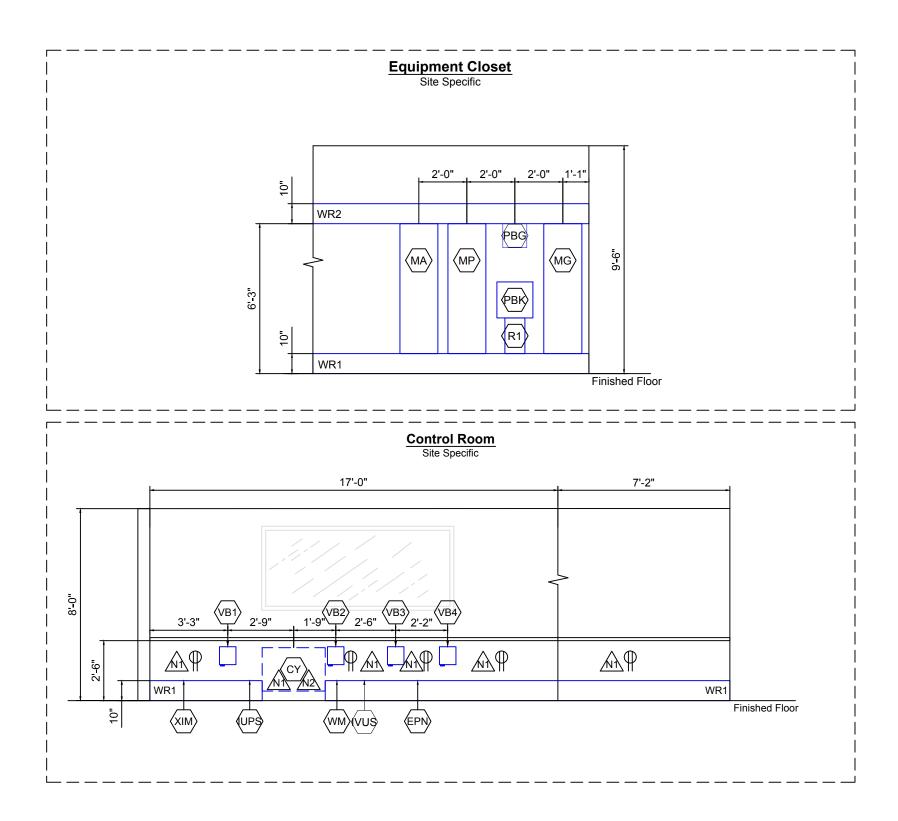
ps Contacts
ct Manager: Freund, Michael
act Number: 303-589-5113
: michael.freund@philips.com

Philips Con
Project Manag
55 C Contact Numt
1/28/2011 Email: micha

Drawing Number
N-WES100655 C
Date Drawn: 1/28/20

E1

**E2** 



Note: The use of 90 degree ells is not acceptable use 45 degree bends at all raceway corners. For conduit runs use the minimum bending radius specific to the conduit diameter. The use of crossover tunnels at all applicable locations is required. This recommendations will help to ensure the integrity of the cables and fiber optic runs.

- Countertop Height Guide:
- 30" for standard seated height.
- 36" for standard standing height.
- \* Ensure that the wall junction boxes are mounted perpendicular to the floor.
- \* Verify exact ceiling height of Equipment and Control Room Area.

#### **Conduit Required**

#### **General Notes**

All conduit runs must take most direct route point to point. All conduit runs must have a pull string.

	B C C C C E C F C	Conduit supplied/installed by contractor - Philips cables installed by Philips Conduit supplied/installed by contractor - Philips cables installed by contractor Conduits and cables supplied and installed by contractor Conduit existing - cables supplied and installed by Philips Conduit existing - cables supplied by Philips, installed by contractor Conduit existing - cables supplied and installed by contractor Conduit existing - cables supplied and installed by contractor Conduit existing - cables supplied and installed by contractor Optional equipment, verify with local Philips Service  P Power (AC) D Power (DC) G Ground S Signal H High Tension C Cooling Hose A Air Supply Hose					A Conduit supplied/installed by contractor - Philips cables installed by Philips B Conduit supplied/installed by contractor - Philips cables installed by contractor C Conduits and cables supplied and installed by contractor D Conduit existing - cables supplied and installed by Philips E Conduit existing - cables supplied by Philips, installed by contractor F Conduit existing - cables supplied and installed by contractor G Optional equipment, verify with local Philips Service					P Power (AC) D Power (DC) G Ground S Signal H High Tension C Cooling Hose A Air Supply Hose																																			
	Bus	Condui	t	Conduit Quantity	Cable Type	Minimum Conduit	Maximum Conduit	Special Requirements																																				Cable Type	Minimum Conduit	Maximum Conduit	Special Requirements
$\downarrow$	Run No.	From	То	Quantity	(*)	Size	Length	Requirements		No.	From	То	Quantity	(*)	Size	Length	Requirements																														
С	1	Power Panel	СВ	1	(P)	Per N.E.C.	Per N.E.C.		A	31	(VB1)	MP	1	(S)	1 1/2"	68'	Multivision.																														
В	2	РВК	PDU Cabinet	1	(P)	1 1/2"	-		A	32	VB2	MP	1	(S)	1 1/2"	68'	Multivision.																														
В	3	РВК	PDU Cabinet	2	(P)	2"	-		A	33	(VB3)	MP	1	(S)	1 1/2"	68'	Multivision.																														
В	4	(CB)	РВК	1	(P)	2"	50'		A	34	VB4	MP	1	(S)	1 1/2"	68'	Multivision.																														
С	5	(CB)	ST	1	(P)	3/4"	50'		A	35	MSA	(UPS)	1	(P)	1 1/2"	91'																															
С	6	РВК	GE	1	(P)	3/4"	25'		A	36	MSA	XIM	1	(P)	3/4"	91'	Ground.																														
С	7	PBG	Room Outlets	1	(P)	3/4"	-	See Sheet "ED2" for details.	A	37	MSA	XIM	1	(S)	3"	91'																															
С	8	(MA)	(WL)	1	(P)	3/4"	55'		A	38	$\left \left\langle TV\right\rangle \right $	(UPS)	1	(P)	1 1/2"	91'																															
A	9	SP	MG	1	(H)	2 1/2"	28.5'	H.T. Cables.	A	39	$\left \left\langle TV\right\rangle \right $	XIM)	1	(S)	3"	62'																															
A	10	SP	MG	1	(P)	1"	28.5'		A	40	XIM	PBG	1	(P)	3/4"	-	Ground.																														
A	11	SP	MG	1	(S)	1 1/2"	28.5'		G	41	(vus	$\left \left\langle \text{SV}\right\rangle \right $	1	(S)	3"	75'	Conduit opening must be covered if the IVUS system is planned for future installation.																														
A	12	SP	MP	1	(S)	2 1/2"	33'		A	42		MSA	1	(S)	2 1/2"	52'	For Table Mounted Injector.																														
A	13	SP	(MP)	1	(P)	1"	33'		A	43	$ \langle c \rangle$	RIC	1	(S)	1 1/2"	50'																															
A	14	SP	(MP)	2	(C)	2"	33'	Cooling fluid hoses for tube.																																							
A	15	SP	(MP)	2	(C)	2 1/2"	33'	Cooling fluid hoses for detector.																																							
A	16	SP	(MA)	1	(S)	2 1/2"	36'																																								
A	17	MSA	(MP)	1	(S)	2 1/2"	49'																																								
A	18	MSA	MP	1	(P)	1"	49'																																								
A	19	MSA	(MA)	1	(S)	2 1/2"	49'																																								
Α	20	MSA	(MA)	1	(P)	3/4"	49'																																								
A	21	\tag{TV}	MA	1	(P)	2"	52'																																								
A	22	\tag{TV}	MA	1	(S)	2 1/2"	52'																																								
A	23	$\left \right\langle \top \vee \right\rangle$	MP	1	(S)	1 1/2"	54'																																								
A	24	ATY	MA	1	(S)	2 1/2"	41'																																								
A	25	ATY	$\left  \left\langle \top \right\rangle \right $	1	(S)	3/4"	75'																																								
A		CY	MP	1	(S)	2"	50'																																								
A	27	CY	MA	1	(P)	2"	55'																																								
A		CY	MA	1	(S)	2 1/2"	55'																																								
A	29	\langle MA \rangle	Control	1	(S)	1"	82'	For optional equipment (Interventional Hardware,																																							
G	30	$\left \left\langle TV\right\rangle \right $	Control Room	2	(S)	1 1/2"	-	ViewForum, Xcelera, etc).																																							

**Conduit Required** 

**General Notes** 

All conduit runs must take most direct route point to point. All conduit runs must have a pull string.

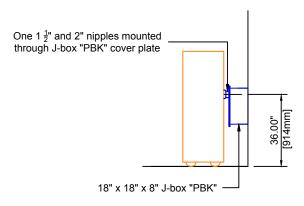


Project
Allura FD20 Ceiling
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Albuquerque, NM

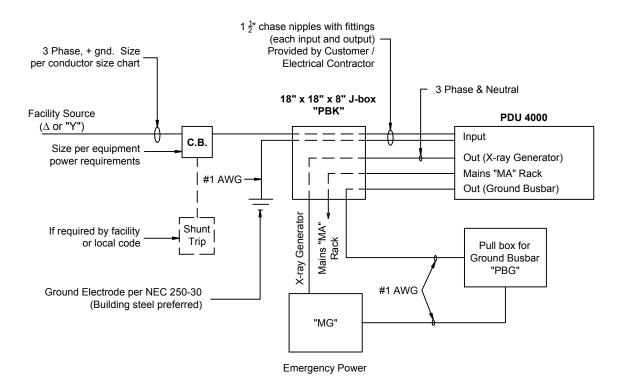
Philips Contacts
Project Manager: Freund, Michael
Contact Number: 303-589-5113
Email: michael.freund@philips.com

Project Details
Drawing Number
N-WES100655 C
Date Drawn: 1/28/2011
Quote: 1-R5TFEL Rev.3
Order: None

**E3** 



PDU 4000 with J-box "PBK" flush or surface mounted behind unit.



Note: Conductors, destinations, and number of conduit runs from PDU to J-box "PBK" and from J-box to equipment will vary from system to system. Consult individual site plans for detailed conduit schedules.

#### Diagram - PDU 4000 Electrical Interface (00.0)



#### **Power Quality Requirements**

Velara 100KW with PDU 4000

Power Output:

Supply Configuration: 3 phase, 3 wire power and ground, Delta or wye

3 phase, 4 wire power w/ Neutral + ground, wye

Nominal Line Voltage: 480 VAC, 60 Hz Line Voltage Variation: ± 10% steady-state

Line Voltage Balance: 2% maximum of nominal voltage between phases

Frequency Variation: ± 1.0 Hz

To 110% of steady-state voltage 100 msecs. Voltage Surges:

Maximum duration, 6 per hour maximum

Voltage Sags: To 90% of steady-state voltage 100 msecs. Maximum duration, 6 per hour maximum

1000 VPK above phase-neutral RMS absolute Line Impulses: maximum. No more than 1 impulse per hour to exceed

500 VPK.

2.0 volts maximum RMS value Neutral-Ground Voltage:

Neutral-Ground Impulses: No more than 1 per hour that exceeds 25 volts and

High Frequency Noise: 3.0 volts steady-state maximum. Over 3.0 volts

permitted for 100 msec. maximum, 1 per hour max.

Grounded Conductor Impedance: 0.1 Ohms @ 60 hz. maximum

#### **Branch Circuit and Wire Gauge Requirements**

Velara 100KW with PDU 4000

Branch Power: 225 KVA

Max Stand by Current: 8 Amps. @ 3 mA, 110 KVP continuous

Circuit Breaker: 3 pole, 125 amperes

Maximum Instantaneous Power: 201 KVA (1000 mA @ 100 KVP)

Recommended conductor sizes for 1% impedance of branch conductors to circuit breaker (CB).

Based on 20° copper conductors:

480VAC 1/0 AWG 95ft 2/0 AWG 120ft 3/0 AWG 151ft 4/0 AWG 193ft 250 KCM 226ft 300 KCM 271ft 400 KCM 365ft

Inst. Current 242 A @ CB Panel

Max. Phase-phase < 200 mΩ

impedance @ CB . Panel

Max. Load Voltage 18.2 V

Drop @ CB Panel

Percent Regulation at 3.8%

Maximum Load @ CB

Output Voltage PDU 4000: 480 VAC ± 10% Max Inst. Current @ PDU output: 305 Amps

Max Phase-Phase Impedance: < 200 mΩ @ PDU output Max Load Voltage Drop: 24.4 V @ PDU output Percent Regulation at Max. Load: 6.4% @ PDU output

Minimum copper wire size, circuit breaker to PDU: #1 - Maximum 50' in length.

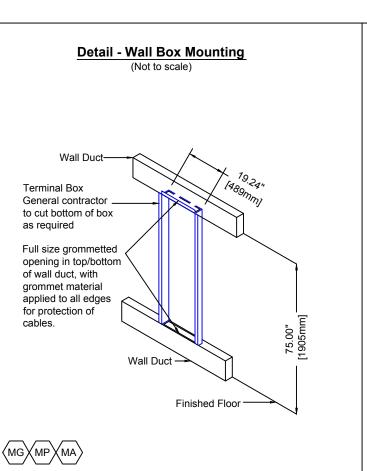


Project Allura FD20 Ceiling VA, Albuquerque Albuquerque, NM

nager: Freund, Michael Imber: 303-589-5113

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N-WES100655 C
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Order: None

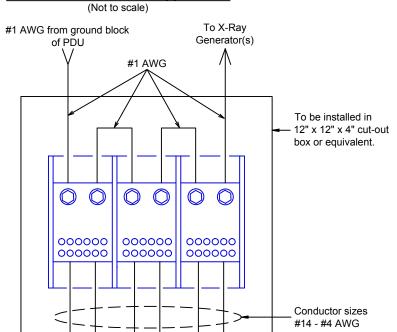
ED1



2.52" 2.52" [64mm] [64mm] Ф 0 4.76" [121mm]<sup>-</sup> 000000 000000 000000 000000 000000 000000 <del>-</del> 7.80" [198mm] 000000 000000 000000 000000 000000 000000

- 1. Furnished and installed by Customer / Contractor
- 2. Purchase from local Ferraz Shawmut distributor, http://www.ferrazshawmutsales.com/index.htm Catalog #69143.
- 3. 62000 69000 Series Blocks http://www.ferrazshawmutsales.com/pdfs/PDB-LARGE.pdf

### **Detail - Ground Busbar Application**



To Philips'

equipment

insulated from

accidental earthing

#### **Invasive Procedures**

This equipment may be used for invasive procedures; therefore, the area to be installed is classified as critical care area per NFPA-99 and NFPA-70 (NEC). These documents specify maximum touch voltages and ground impedance in these areas.

Test performed by GSSNA service ensure that these specifications are met by the GSSNA equipment. It is the facility's responsibility to ensure that these specifications are met by the wall outlet, facility structure, and other equipment not installed by GSSNA.

The GSSNA specified "Central Ground Busbar" serves as a ground reference for GSSNA equipment. It may also serve as the "Reference Grounding Point" of the room as defined in NFPA-99 (3-5.2.1.2) for non-PMSNA equipment.



(0.80)

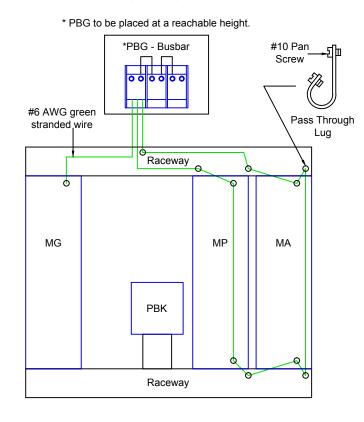
Allura FD20 Ceiling

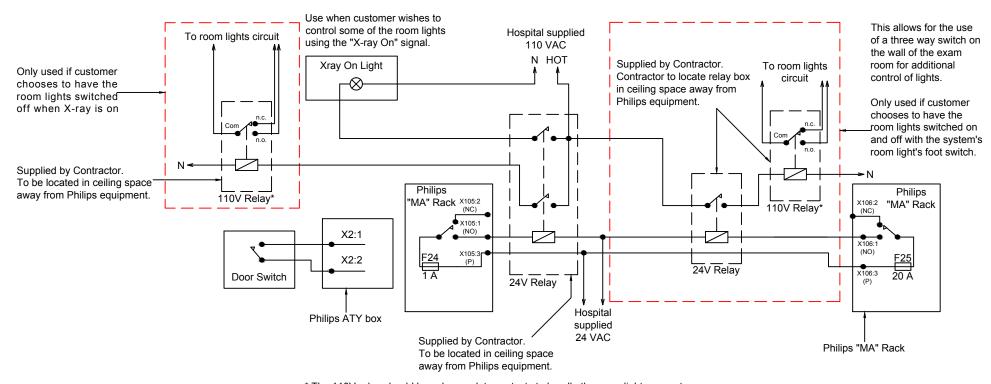
VA, Albuquerque

Albuquerque, NM

## **Detail - Grounding**

(Not to scale) (Not site specific) (08.0)





To other

and room

outlets

equipment

To metallic

within patient

structure

vicinity

(WL \DS

\* The 110V relay should have heavy-duty contacts to handle the room lights current.

All items shown (except Philips items) to be supplied by Customer / Contractor.

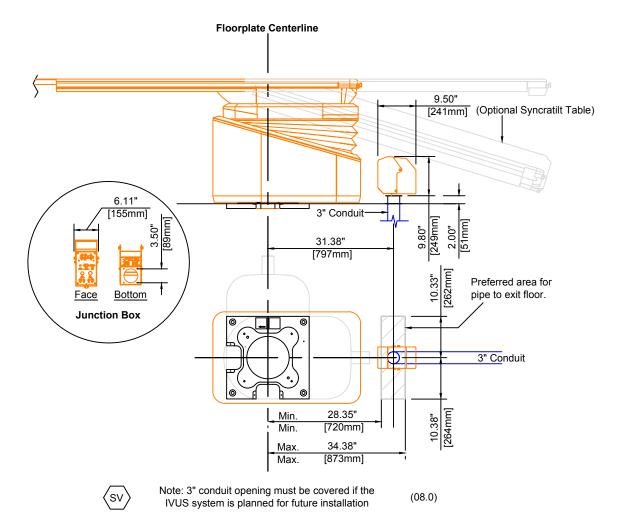
**Diagram - Typical Connection of** X-Ray On Light, Door Switch, & Room Lights Freund, Mich

Drawing Number
N-WES100655 C
Date Drawn: 1/28/201
Quote: 1-R5TFEL Rev.3
Order: None

ED2

(08.0)

#### Detail - Volcano IVUS: Pre-Installation Data Area for Pipe to Exit Floor (Not to scale)

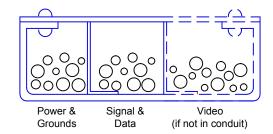


**Detail - Cable Trough Divisions** 

Troughs or ducts must be separated by metal barriers into three sections:

1. High voltage (H.T.) cables to be run separately from all cables.

- 2. Power cables and ground cables can be run together.
- 3. Signal cables and data cables can be run together but must be separated from power cables.
- 4. Video cables to be run separately from all other cables.



- 5. It is important that all cables are placed in the appropriate trough and at no given point do any cables from one division cross cables from another. Trough separation must be continuous from the beginning to the end of the run. Utilize crossover tunnels as appropriate.
- 6. Trough or ducts: steel with steel dividers grounded to building ground.
- 7. Contractor to provide cable restraints in all troughs.
- 8. Acceptable cross-overs: Walker DuctCat. #RPD10-TUN-3C / Square D Cat. #RSV122ST

Project
Allura FD20 Ceiling
VA, Albuquerque Albuquerque, NM

nager: Freund, Michael umber: 303-589-5113

ED3

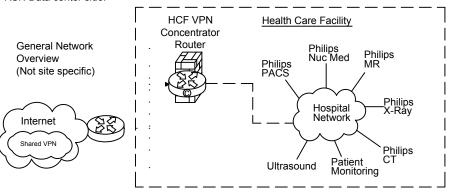
(10.0)

#### Broadband Site-to-Site Connectivity (Preferred)

This connectivity method is designed for customers who prefer a connection from the RSN Data Center to the Health Care Facility (HCF) utilizing their existing VPN equipment.

#### **Connectivity Details:**

- A Site-to-Site connection from the RSN data center's Cisco router will be established to the HCF's
- The VPN Tunnel will be an IPSEC, 3DES encrypted Tunnel using IKE as standard, but alternative standards are also available, such as AES, MD5, SHA, Security Association lifetime and Encryption
- Every system that we will be servicing remotely will have a static NAT IP that we configure on the RSN Data center side.



#### Action Required by Hospital:

- Review and approve connection details.
- Complete appropriate Site Checklist.
- Configure and allow Site-to-Site access prior to setting up connectivity depending on the access criteria that the HCF decides to implement (ex: Source IP filtering, destination IP filtering, NAT assignment, etc.).
- Route traffic from within the hospital network with destination addresses 192.68.48.0/22 to the designed IP provided by Philips.

#### **Broadband Router Installed at Health Care Facility**

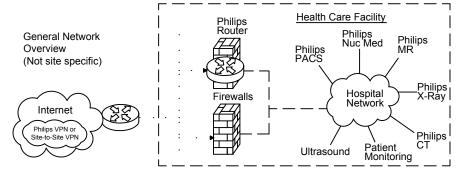
This connectivity method is designed for customers who have a dedicated high speed connection for Philips equipment.

#### **Connectivity Details:**

- An RSN Cisco 1711 or 1712 router will be preconfigured and installed at the HCF by Philips in conjunction with the HCF IT representative.
- The VPN Tunnel will be an IPSEC, 3DES encrypted Tunnel using IKE and will be established from the RSN-DC and terminated at the RSN Router on-site
- One to One NAT is used to limit access to Philips equipment only.
- Router Config and IP auditing is enabled for Customer IT to view via website 24/7.
- Dedicated DSL connections are also supported.

#### Option 1: Parallel to HCF Firewall Connectivity Method

This connectivity method is designed for customers who prefer a Philips RSN Router installed on site utilizing all the security features provided and managed by Philips.

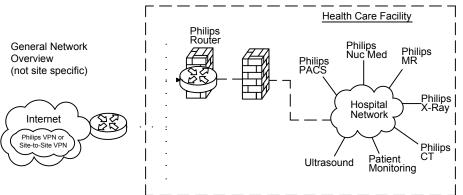


#### **Action Required by Hospital:**

- Assign a fixed public IP Address from the ISP to be configured on the Philips router. This is the DOTTED link on the picture connected to the firewall
- Assign a Back end IP for the Philips router on the Hospital Network.
- Complete appropriate Site Checklist.
- Route traffic from within the hospital network with destination addresses 192.68.48.0/22 to internal Philips router Ethernet interface. This is the DASHED line connected to the firewall.

#### Option 2: Back End Connected to the HCF Firewall Connectivity Method

This connectivity method is designed for customers who prefer a Philips RSN Router installed on site by setting up an IP-Based policy allowing access thru existing HCF Firewall to Philips equipment.

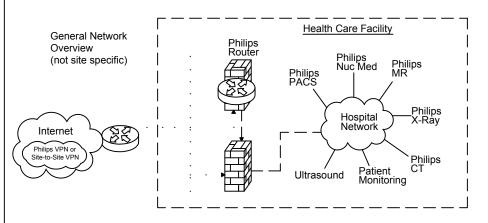


#### Action Required by Hospital:

- Assign a fixed public IP Address from the ISP to be configured on the Philips router. This is the DOTTED link on the picture connected to the firewall.
- Assign a Back end IP for the Philips router on the Hospital Network.
- Complete appropriate Site Checklist.
- Route traffic from within the hospital network with destination addresses 192.68.48.0/22 to internal Philips router Ethernet interface. This is the DASHED line connected to the firewall
- Configure and allow on the firewall on the DASHED line interface access between the IP address allocated by the hospital to the Philips internal Ethernet router interface and the target modality IP address

#### Option 3: Router Installed Inside the HCF's DZM

This connectivity method is designed for customers who prefer the RSN Router installed inside and existing, or new DMZ, allowing access to Philips equipment.



#### Action Required by Hospital:

- Assign a fixed public IP Address from the ISP to be configured on the Philips router. This is the DOTTED link on the picture connected to the firewall.
- Assign a Back end IP for the Philips router on the Hospital Network.
- Complete appropriate Site Checklist.
- Route traffic from within the hospital network with destination addresses 192.68.48.0/22 to internal Philips router Ethernet interface. This is the DASHED line connected to the firewall.
- Configure and allow on the firewall on the DASHED line interface IPSec protocol communication by opening protocol 500, 50, 51, 47 and port 23 + TACACS. Traffic should be between external IP Address located on the Philips router and the RSN Data center IP address 192.68.48/24 and IP address AOSN TACAS.
- Configure and allow on the firewall on the DASHED line interface access between the IP address allocated by the hospital to the Philips internal Ethernet router interface and the target modality IP address.

**N1** 

<u>'</u>									
<u>Instructions</u>									
This form is to be used by Project Manager, Contractor and Service Engineer.									
Information is used to develop and determine site ready date.									
Items listed are go/no go items for delivery unless noted as delay only items.									
Items identified with *** as delayed items must be completed after hours or on weekend. These items cannot be accomprogress. Also, these items must be completed within two days of installation start or they may stop installation.	plished while installation is in								
Site Readiness Checklist									
Modality:	-								
Order:	-								
Site Name:	_								
Location:	-								
Contact Name:	_								
Contact Phone Number:	_								
Customer site preparation verified in general against the Philips final planning drawings.									
Walls finished including painting.									
Doors installed.									
Floor leveled according to Philips drawings and specifications.									
Floors are tiled/covered finished. Flooring is covered with protective covering (scratch protection).									
Ceiling lights installed.									
Cable conduit and ductwork installed and clean. Position checked. Duct covers in place but not finally closed. Cable opening are clear, without sharp edges. Pull strings in conduit. Installation per Philips specifications.									
HVAC environmental equipment installed and working according to Philips specifications.									
Ceiling installation completed.									
Electrical preparation according to Philips specifications.									
All network cabling, drops installed according to Philips specifications (including hardcopy cameras).									
All pre-cabling identified on Philips drawings has been installed.									
Pre-move survey completed - Delivery route identified.									
Lead glass installed ***.									
X-ray warning lights installed ***.									
Dedicated phone line for modem use***.									
Room has been cleaned ***.									
Cabinets and casework installed***.									
RSN survey completed and submitted									
Philips RSN Champion contacted.									
Approved for Delivery									
Project Manager	Date								
Service Engineer	Date								

Items Specific for the Cardio/Vascular modality
Unistrut installed and level according to Philips specifications
Floor plates installed and level according to Philips specifications
All cover plates have holes punched and nipples required and bushings installed
Emergency power requirements installed according to Philips specifications
Building steel ground installed to PDU
Room electrical grounds installed to PPC middle section
Conduit lengths measured according to Philips specifications. NOTE: Specifications is from source box to destination box (not just conduit run length)
Routing of ductwork and conduits must be installed according to Philips specifications



Allura FD20 Ceiling
VA, Albuquerque
Albuquerque, NM
-Room 506

Philips Contacts
Project Manager: Freund, Michael
Contact Number: 303-589-5113
Email: michael.freund@philips.com

Project Details
Drawing Number
N-WES100655 C
Date Drawn: 1/28/2011
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Order: None
SAND RELATED INSTRUCTIONS PROVIDED
N DOCUMENTS.

CHK